



Food Habit and Livelihood of Monpa Tribe in Tawang District of Arunachal Pradesh, India

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Abstract— People living in Tawang are able to adapt to eco-physical conditions, cultural practices, and new economic opportunities through interaction of traditional and modern economic systems. The majority of subsistence agriculture is primarily conducted on a familial basis with hardy crops (e.g. barley, potatoes, buckwheat, millets) successfully grown due to cooler temperatures and short growing seasons. **Objective:** The aim of the study is to find out the food habit and livelihood pattern of inhabitants in Tawang district of Arunachal Pradesh. **Research Methodology:** This descriptive/qualitative study has examined the food habits and livelihood patterns of the Monpa Tribe of Tawang District using a descriptive and qualitative research methodology. **Result and Discussion:** Tibetan Buddhism has had an impact on the dietary practices of the Monpas as their food ethics are influenced by this religion. Although the Monpas generally eat meat, their animals are killed primarily for communal purposes and non-ritual consumption is generally considered an unnecessary act of killing. **Conclusion:** Cultural, ecological and local resource management perceives a close symbiotic relationship between the food habits and the livelihoods of the Monpa Tribe in Tawang District. It reflects an ancient way of life adapted to the Himalayan region over hundreds of years.

Keywords— Eco-Physical, Traditional, Modern, Temperature, Tibetan Buddhism, Ecological and Himalayan Region

I. INTRODUCTION

The villagers in Arunachal Pradesh's Tawang District have a distinct mix of subsistence agriculture, traditional crafts, pastoralism and increasing income from tourism. The major inhabitants of Tawang district are the Monpa and the Brokpa. Due to the natural environment and climate of the eastern Himalayan region, at elevations from 2,700m to more than 4,500m the organisation of work for the majority Monpa inhabitants of Tawang has developed according to their ecology (Mibang & Behera, 2019). The majority of subsistence agriculture is primarily conducted on a familial basis with hardy crops (e.g. barley, potatoes, buckwheat, millets) successfully grown due to cooler temperatures and short growing seasons (Singh, 2016). Scholars comment that landholdings are usually limited in size and fragmented

in nature, and there is a direct relationship between labour, use of community parts of the land and the traditional ecological knowledge of the household (Choudhury, 2018). In the upper Tawang area, livestock farming, particularly yak-herding, is a crucial part of the villagers' livelihoods. The Brokpa pastoralists continue to migrate on a seasonal basis between upper elevation and lower valleys with their herds of yaks and provide milk, meat, wool, and transport and support for agriculture (Das et al., 2022). Ethnographers argue that yak husbandry is economically important and socially integrated with the ritual practices and the social organisation of the Monpa people (Sarma, 2020). Livelihood in rural areas seems to offer both a more complete and compound picture of the complexities of survival in low income region than the terms earlier considered adequate such as 'subsistence', 'income' and

'employment'. Employment or unemployment is an unimportant question-no one is unemployed and no one is employed (by someone else)-everyone works nevertheless; periods of no work are periods of relaxation and rejoice (Mandal, 2012).

In addition to agriculture and grazing, handicrafts and traditional weaving are income-generating activities for many women. The potential growth of the handicraft sector utilizing Monpa wool and wood-crafted items has become increasingly integrated into the local economy as evidenced by government investment in handicraft centres and more people travelling to Tawang (Tsering, 2017). Some handicrafts and artisan products can provide income year-round, support household incomes outside of the household's primary source of income, retain cultural heritage for future generations and assist in preserving cultural heritage. The increase of tourism has become a very important source of income for the Tawang District over the last few years. The existing economic capacity and attractiveness of monasteries, alpine lakes and trekking routes have attracted visitors, providing local people opportunities to work in hospitality and tour guide positions, participate in rural tourism (homestays) and produce foods and crafts for sale (Lama, 2021). While providing seasonal income and supporting local business development, tourism has also been associated with negative environmental impact and social justice issues in rural Tawang (Dutta & Lepcha, 2020). The potential for new sources of income has increased through government support of economic development initiatives, expansion of rural infrastructure, and the Tawang community's commitment to sustainable management of its natural resources. Improved infrastructure, education, and access to markets have allowed for many additional ways for the people of Tawang to earn a living (Mandal, 2015). The people of Tawang have adapted to the eco-physical environment, cultural practices, and new economic opportunities through the intersection of the traditional and modern economic systems.

Historically, rural households in Arunachal Pradesh have relied on multiple sources of income for their survival; however, in more recent times, the development sector has begun to pay more attention to issues related to rural development as it continues to evolve based on economic conditions (Mandal 2014).

OBJECTIVE

The aim of the study is to find out the food habit and livelihood pattern of inhabitants in Tawang District of Arunachal Pradesh.

II. RESEARCH METHODOLOGY

1. Research Design: The Monpa Tribe living in Tawang District of India has been studied by means of a qualitative descriptive method to find out their current eating habits and how they earn a living. This method has helped describe what the current situation is with regard to Indigenous practices, socio-econ

omic systems, and the adaptations of their environment as well as how they earn a living (i.e., livelihood strategies). Qualitative methods have provided opportunities for researchers to learn about the cultural meanings associated with food such as eating habits, pastoralism, agriculture, handicrafts, and tourism.

2. Study Area: Tawang District in Arunachal Pradesh, India is located at a high altitude from 2700m high up to 4500m high. There are two main ethnic indigenous groups in Tawang District whose culture and economy have been affected by living near the Himalayas. Examples of these systems (agriculture, pastoralism, and household subsistence systems) of the Monpa Tribe and Brokpa (sub-group of Monpa) are available through ethnography and some secondary literature.

3. Type of Data: The majority of the data used to collect this case study are from an academic, government, and other published journals about food systems and livelihood strategies of the Monpa Tribe. Ethnographic Research, Peer Reviewed Journal Articles, Government Reports, and Books have provided the majority of collected secondary data. The data contained in these various types of publications includes previous research on the agricultural systems of the Himalayas, and the yak herder's and pastoralist's and Farmers of the Himalayas present how the environmental factors associated with climate change have impacted the each of their respective livelihoods.

3.1 Secondary Data Sources: Academic books and monographs relating to tribal livelihoods, peer-reviewed journals (for example, Anthropology, Ecology and Food Studies), Reports published by the Government and Institutions, Ethnographic materials including documentation of Monpa and Brokpa peoples, Journal Articles relating to high-altitude agriculture and Pastoralism, Cultural Studies have focused upon the societies of Himalayan Buddhists. This document represents the information available in the various types of literature in an integrated manner in order to gain a more complete understanding of Monpa Food Culture and livelihood.

4. Methods of Data Collection for this Study: Since this study is being conducted from secondary data, the methods of data collection include:

4.1 Literature Review: A systematic review of literature looks on the Monpa Culture and Social Structure, High-Altitude Agriculture, Yak Pastoralism and Brokpa Mobility, Indigenous Food Systems and Fermented Foods, Tourism Development in Tawang and Traditional Ecological Knowledge of and Forest Usage. Based on analysing the established scholarly perspectives about Monpa food culture and food systems, a cohesive narrative has been developed using existing literature.

4.2 Document Review: Analyzing documents that have been published in regards to the Monpa allowed us to identify recurring themes within Monpa's dietary practices, Socio-Economic Determinants of Livelihood, Changes occurring in Patterns of Livelihood due to Economic Integration, Modernization and Tourism Activities, and Cultural Continuities and Ecological Adaptations.

5. Method of Sampling: A purposive sampling method is used to select articles and books that focus on the Monpa and Brokpa communities, Food systems in Eastern Himalaya, the agricultural system of the Eastern Himalaya, including ecological factors that influence agricultural production, Traditional handicrafts, Tourism as a diversified form of livelihood and the role of Buddhist monastic institutions in agriculture. The study only considered sources that directly contributed to the study's objectives.

6. Analytical Frameworks: Analytical frameworks used to evaluate data collected for study using the thematic analytical framework are as follows:

6.1 Ecological Adaptation: The effects of altitude and climate upon food patterns, agricultural methods, relative abundance of resources and traditional herding of stock are investigated within an ecological framework.

6.2 Cultural Determinants: How Buddhism influences social organisations and the way food is exchanged among groups during festivals, etc. and how other cultural factors can affect food-exchanging behaviours.

6.3 Economic Practices: How subsistence farming, yak herding, craftsmanship, tourism and forest resource utilisation relate to and are connected with each Monpa and Brokpa community.

6.4 Trends Related To: Increasing market access to rural communities, the influence of a modern education on the dietary choices of the youth, improved transport and connectedness to cities, generations of traditional food

movement from older to younger generations are examined and how tourism has created other income opportunities for rural communities.

7. Data Interpretation Method: To reflect continuity and change, all themes are examined together. For data interpretation, the following two methods are used:

7.1 Contextual Method: To analyse food habits and livelihoods, it is explained in terms of Himalayan agro-ecosystems, traditional ecological knowledge and the Buddhist philosophical view of food.

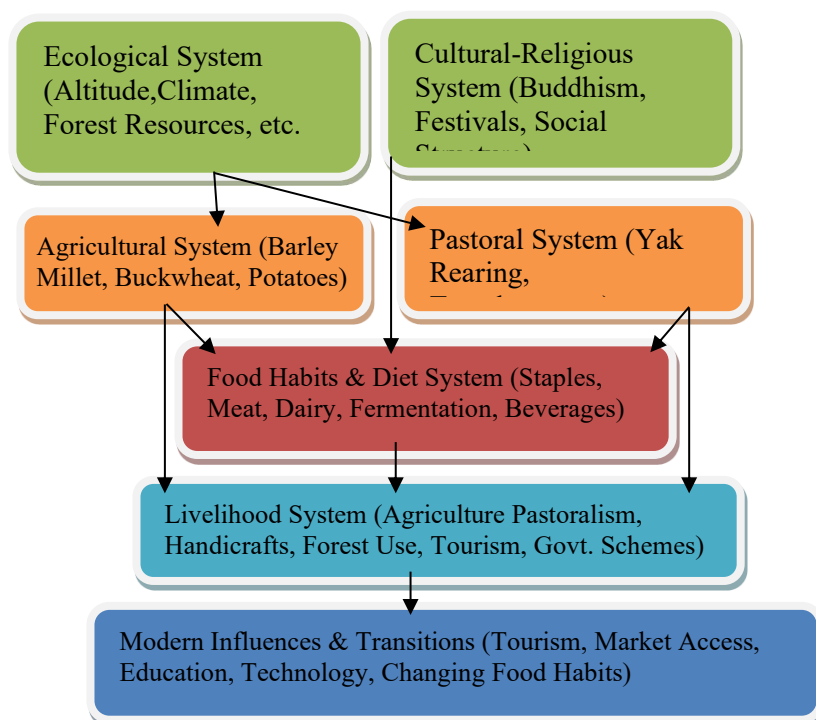
7.2 Socio-cultural Approach: Cultural and social implications of food-sharing customs among communities, the activities are associated with them, and the evidence for them within urban cultures. Also it includes dietary practices associated with monasteries and how monks have affected the diets of people within their sphere, ritual practices associated with the consumption of food items; methods employed by some Indigenous peoples of the Western Hemisphere to preserve indigenous food sources, including environmental controls.

7.3 Ecological/Economic Connections: This portion of this study has assessed a selection of ecological/economic relationships between agriculture and elevation (altitude), herding/pastoralism/seasonal migrating, tourism/economic diversification, and forest products and household (subsistence). The analyses have indicated that the way in which cultures exist is affected by both their ecological and economic conditions.

8. Ethical Issues: There are no ethical concerns directly related to the human subjects in this project, as this study has utilised secondary material. However, there are a number of considerations with respect to ethical responsibilities to give proper recognition for Indigenous people's knowledge and cultural practices, preventing the misrepresentation of tribal customs and practices, proper sourcing of all academic literature relied upon for this study, and the need for consideration of cultural sensitivity while analysing and interpreting results. Utilising a methodological framework for addressing the ethnobotanical, dietary, and economic aspects of the Monpa Tribe of Tawang District has been an appropriate and comprehensive approach to understanding their culture. Quality academic sources and thorough thematic analysis are used to generate this understanding.

III. RESULT AND DISCUSSION

CONCEPTUAL DIAGRAM ON FOOD HABIT AND LIVELIHOOD OF MONPA TRIBE



The Monpa people's culinary habits and ways of earning a living have formed as a result of the merging of many ecological, agriculture, pastoralism, cultural, and modern-day systems, according to Choudhury and Hazarika's ethnographic studies on the Monpas. The main basis of these interconnected systems is the Ecological System. The Monpas reside in an extremely cold climate at high altitudes in the Himalayas, where it has limited seasons for cultivating crops and has an abundance of forests. Therefore, the natural burden placed on the land determines which varieties of plants and animals are grown and what natural resources are utilized in their everyday existence and to survive (Singh, 2008). Agriculture, as a result of the Ecological System, is the foundation of the Monpa agricultural industry. Barley, millet, buckwheat, and potatoes are the types of crops that the Monpas cultivate, and they are suited for the high-altitude region of Tawang. The Monpas cultivate these crops in a traditional manner given the limited growing season and difficult terrain associated with mountainous regions; Monpa farmers use organic methods and very little mechanization to produce their crops (Dutta, 2013).

Agriculture is a source of food for the Monpa and has cultural connections to rites of passage, seasonal cycles of life and work, and cooperative efforts of community members (Mandal, 2014). The Pastoral System is an integral part of the Monpa economy, as yak husbandry and

transhumant herding are practices undertaken by the Monpas and provide multiple resources, including milk, meat, wool, muscle power (as a mode of transportation), and dung for fuel. Seasonal mobility enables the optimal usage of the available high-altitude pasture resources, and pastoral life is a cornerstone of Monpa cultural identity and a repository of Traditional Skills (Riba). The Ecological and Pastoral Systems are interdependent. The Climate and Terrain dictate the cyclical patterns of grazing and herd management (Tsering, 2011).

Buddhism, various festivals and rituals, and the relationships between various social strata help define the way that the Cultural-Religious System (C-R_S) affects both agricultural and pastoralism practices. Through the various traditions and beliefs of Buddhism, the lifestyles of people, q.e. what they eat (food), how they care (or treat) animals, when they celebrate or perform ritual activities (celebrations), and how they work together in a community (cooperative work) are determined in accordance with the Cultural Requirements System (C-R_S) developed by Aris (2004). In addition to being a system of cultural norms that foster a good life, Buddhist ritual activities like Losar, Torgya and Choskar are ways for communities to share food with each other and engage in ritual activities together. The C-R_S has also served to protect the Indigenous Knowledge, Conduct Codes, and Environmental Ethics of Indigenous Peoples (Mipun, 2010).

The E-C-A-P System, a comprehensive concept of Ecology-Culture-Agriculture-Pastoralism of the Monpas Peoples, portrays the three elements of Ecology, Culture, and Agriculture-Pastoralism as interconnected entities. The Monpas Peoples are primarily dependant on agriculture, with a heavy dependency on grains, meat, dairy products and fermented foods. This agricultural way of life was forced upon them due to the harsh environment of the Himalayan Region (Sarkar, 2017). Some examples of Monpas traditional fermented foods are chang (fermented barley beer), fermented cheese, preserved vegetables, and smoked meat. These foods are critical to the Monpas during long winters in the Himalayas as they are a main source of nutrition. Thus, the Monpas Food Habit/Diet System may be viewed as an agricultural and cultural adaptation of their geographic location (Chakravarty, 2015).

The set of Ecological, Cultural, Agricultural, and Pastoral Systems create a larger Livelihood System for the Monpas including Tourism and Government Programmes. This Livelihood System includes conventional means of income for the Monpas through Agriculture, Pastoralism and Forest Resource use as well as modern means to earn additional income such as Traditional Handicrafts and increasing reliance on Tourism and Government Programmes. The Forest Resources provide the Monpas with Fuel wood, Medicinal Plants, building materials for Homes and animal Feed. The Handicrafts of the Monpas allow them to maintain their cultural Identity while earning a supplementary Income (Mandal 2013). The Handicrafts and Agricultural, Pastoral and Forest Resources are essentially the basis of the Household Economic Activity of the Monpas as a result of Nationalist Movements (Bora 2012). The Modern Influences and Transitions at the bottom of the diagram represent how ongoing developments in tourism, market Integration, education, technology, infrastructure and Food Habits continue to have an impact on the Monpa lifestyle. The increased demand for local handicrafts, the expansion of homestay tourism, increased availability of government employment schemes have provided local handicrafts with a significant increase in demand (Lama 2020). The Modernisation of the Monpas' Food System is also having a significant effect on the Monpas' traditional diets, reducing their dependence on pastoralism and introducing packaged foods into the diet. Modernization is causing a significant effect on the way we think about Food consumption, including how we access it through Markets and through the consumption of packaged Food (Tsering and Singh 2019). The Youth are being provided with different Aspirations through Education and Technology and these are also causing a change to the way Knowledge has been traditionally transmitted from generation to generation.

Thus, in summary, the diagram demonstrates that Monpa livelihood is not only one dimension; rather, Monpa livelihood is the outcome created from the interaction of ecological conditions, subsistence systems, culture, and modernization (Multiple anthropological viewpoints support this, see: Hazarika, 2015; Choudhury, 1998). Each of these four systems influences each other and thus creates a cyclical spiral that results in an entire economic and social environment that supports Monpa's sense of identity, existence and growth in their high-elevation setting of Arunachal Pradesh.

Tawang District in western Arunachal Pradesh is primarily inhabited by two major tribal groups—the **Monpa** and the **Brokpa**—whose cultural, linguistic and economic characteristics reflect centuries of adaptation to the eastern Himalayan environment. These tribes share historical and cultural linkages with Tibet and Bhutan, shaped by Buddhist monastic traditions, trans-Himalayan trade and high-altitude agro-pastoral livelihoods (Mibang & Behera, 2019). Although the Monpa constitute the demographic majority, the Brokpa represent an important pastoral community with distinct customs and social organisation. Together, these groups create a vibrant cultural landscape that defines the identity of Tawang. Actually, the Brokpa are also a subgroup of the Monpa tribe. Here to distinguish between those both are considered as separate tribe.

(i) **Monpa Tribe**

Tawang District in Arunachal Pradesh, India is home to the Monpa people, the largest ethnic group in this region (Tsering, 2017). The Monpas belong to a Scheduled Tribe under the Indian Constitution. The Monpas follow the Mahayana Buddhist belief system, in particular the Gelugpa (Yellow Hat) sect of Buddhism. The Tawang Monastery is the main focus of the Monpa spiritual belief system and is regarded as a major centre of religion, culture, and administration for the Monpa People (Tsering, 2017). Tibetan is the primary spoken language of the Monpas and belongs to the Tibeto-Burman language family. There are three dialects of Tibetan spoken by the Monpas; Tawang Monpa, Dirang Monpa, and Lish Monpa. The Monpas speak a dialect of Tibetan which has been influenced by the Tibetan Language but has developed its own distinct local language features as a result of centuries of geographical isolation in the Himalayan Mountains of India (Dutta & Mitra, 2016). Oral traditions maintained by the Monpas indicate that the tribe originated in Tibet. The similarity of their religious traditions, architecture, and, writing systems further support the suggestion that the Monpas originated from Tibet (Mibang & Behera, 2019). Cultural Life and Social Structure of the Monpa Tribe: The Monpa tribe is structured along clan lines and has strong ties

to family and to kinship. The Monpas follow Buddhist ethics as the basis for their social norms, methods of conflict resolution, their community festivals, and operation of village institutions. The Monpas have three major festivals: Losar (New Year), Torgya (Monastic Festival), and Choskor (Agricultural Festival). Each of these festivals provides an opportunity for the Monpa people to strengthen their sense of belonging and promote their Monpa identities (Lama, 2021). The traditional clothing of the Monpas consists of woollen garments, such as the shingka (robe) and khampa footwear. Most women of the Monpa Tribe make carpets, shawls, and other woollen items, while most of the men of the Monpa Tribe are engaged in carpentry, agriculture, and as practitioners of traditional medicine. Monpas typically construct their dwellings out of wood and stone using methods that represent Tibetan architecture and that are adapted to the extreme environmental conditions of the region (Tsering, 2017).

Livelihood Systems and State Economy of Monpa Tribe:

The Monpas primarily engage in mixed agriculture and livestock rearing, supplemented with crafts and weaving, with a growing dependence on tourism to support their economic activities. Monpas are also engaged in growing a range of crops (e.g., barley, buckwheat, millet, potato), utilizing terrace farming and cooperative labour through groups known as tsogpa (Choudhury, 2018). The communal association of the Monpa people with Buddhist monasteries fosters values of collaboration, generosity, and collective welfare within their community.

(ii) Brokpa Tribe

The Brokpa, a subgroup of the larger Monpa tribe, referred to locally as Brakpa or Drokpa, is a semi-nomadic pastoral population residing mostly at high altitudes in Tawang District, e.g. Ludrub, Lubrang, Zemithang, Chug, and Thingbu. While fewer in number than the Monpa; the Brokpa are one of the most unique, culturally enriched groups in Arunachal Pradesh.

Ethnicity, Language and Origins of Brokpa Tribe: The Brokpa people speak the Tibeto-Burman language known as Brokpa or Brokke, which has significant linguistic differences from the Monpa of Tawang. Scholars believe that the Brokpa originated from Tibetan nomadic groups who migrated from Tibet to seek better pastures for yak herding several centuries ago (Das et al., 2022). The customs, clothing, and societal structure of the Brokpa culture reflect longstanding trans-Himalayan pastoral traditions.

Transhumant Pastoralism of Brokpa Tribe: The Brokpa practice transhumant yak pastoralism whereby herders migrate seasonally to alpine meadows in the summer and lower valleys in the winter. Yak husbandry is economically

the backbone of Brokpa society, providing milk, meat, wool, clarified butter, leather, and transport, thus making it one of the most ecologically compatible ways for humans to make a living at high-altitude regions (Sarma, 2020).

The subsistence and trade of the Brokpa and Monpa people revolve around the use of yak products including butter (mar), cheese (churpi), dried meat and woollen articles. The Brokpa exchange dairy products for grains, vegetables and clothing with Monpa villages; this is a traditional barter system that has been extensively studied throughout the western Himalayan region (Mibang & Behera, 2019).

Customs of Dress and Social Organisation of Brokpa Tribe: The primary articles of clothing worn by the Brokpa include yak hair coats, felt caps with decoration made from animal hair, and boots designed for walking on ice or snow. Skills in the production of these garments are primarily passed down through the women of the Brokpa community who weave yak wool to make the tents, ropes, and clothing that they require. Their social lives are organised around the pastoral calendar with important festivals such as Choskor, Losar, and Phongla, which are major seasonal transitions for communal gatherings (Lama, 2021). The Brokpa have an extensive oral tradition that is expressed through folktales, songs, and rituals depicting different aspects of pastoral life, the sanctity of the mountains, and the interdependent relationship between humans and animals.

Coexistence and Cultural Exchange between Monpa and Brokpa: Monpas and Brokpas have a long history of coexistence through cultural exchange and shared cultural similarities of interdependence based on ecology, trade and Qing Buddhism. Brokpas provide yak-derived products for Monpas, who in turn produce agricultural products, pottery, textiles and market goods for Brokpas. Collaborative marriages, common celebrations and shared monastic teachings have united both communities in more ways than one (Tsering, 2017). Monpas and Brokpas both play a significant role in performing religious rites at Tawang Monastery, which serves as a mutual centre of governance, education and cultural preservation for Tawang District. The Monpa and Brokpa tribes have primarily shaped the cultural landscape of the Tawang District based on their respective languages, customs, philosophies and ecologies as well as the environmental characteristics of the Himalayas. The continued cultural transmission from Monpas and Brokpas and the social/environmental adaptations from modernism, tourism and climate change help to create a common thread through the unique socio-cultural processes of Arunachal Pradesh. Researchers have documented that both tribes maintain strong indigenous identities despite the presence of outside/influences due to the role of community institutions, adherence to Buddhism

and nurturing successful subsistence lifestyles through the cohesive relationships among Monpas and Brokpas (Mibang & Behera, 2019).

Culture and Culinary Habits of the Monpa Tribe: The Monpa tribe of Arunachal Pradesh has a diet heavily influenced by three factors: local ecology, Buddhist culture, and an economy that relies heavily on pastoralism and agricultural production to support mountainous living (Mibang and Behera 2019). The diet they practice differs significantly from that of other tribes living in Arunachal Pradesh due to the large amount of rain received in the eastern Himalaya region and the fact that the Monpa tribe relies on indigenous food sources (plants, livestock, and forests) (Mibang & Behera, 2019). They use their food to balance nutrition with the availability of local ingredients and have developed methods to preserve food over the long winters experienced in the region.

Staple Food Sources and Indigenous Grains: For the Monpa people, the dominant food sources are cereals and grains that can withstand cold weather and grow within a limited timeframe. The major staples of the Monpa diet are barley, buckwheat, maize, and millets; all of which can be made into flour and used to create many of the traditional food products consumed by Monpa tribes (Singh 2016). Barley is of particular importance to the Monpas because it produces tsampa, or roasted barley flour, a staple food item that the Monpas consume with tea and/or butter. Buckwheat pancakes, called khura, are also a favourite food of the Monpas for breakfast, typically eaten with butter tea or fermented cheese. While rice is consumed by the Monpa tribe, historically, its availability has depended on trade from the lower valley regions and has thus led to millet and barley being the dominant staple foods through most of the high-altitude villages within Arunachal Pradesh (Choudhury 2018).

Vegetables, Foraged Foods and Seasonal Greens: Seasonal vegetable consumption is an important component of the Monpa diet and consists of potatoes, turnips, radishes, cabbages, beans and leafy greens grown in the kitchen gardens or terraced fields of the Monpas. Climatic limitations and environmental constraints have led to the reliance on preserved vegetables to meet the winter's food needs of the Monpa community as well as others throughout the Himalaya. Traditional means of vegetable preservation that have been well-documented in Himalayan foodways (Tashi, 2014) are through sun-drying (peka), smoking and fermentation. Edible plants such as mushrooms, nettles and ferns provide a unique source of antioxidants and vitamins and also provide the Monpas with unique foraged health-promoting food sources (Choudhury, 2018). Fermented foods play a vital role in gut health at high-altitudes;

therefore, consuming a variety of fermented products enhances the nutrition and successful dietary habits of individuals residing in the Himalaya region. Common in the winter months, Zan is a thick millet or barley porridge, and dried leafy greens, known as tsogpa, facilitate the consumption of vegetables.

Foods from Animals: Meat, Dairy Products, and Yak-Based Foods: Animal proteins comprise a majority of the Monpa people's diet. Households can choose from a variety of meats such as pork, beef, chicken, or yak based on critical factors including availability and household income. Many high-altitude Brokpa communities eat a significant amount of yak meat (often in the form of dried meat stored as shyak-shing) during the winter months (Das et al., 2022). The majority of Tibetan-Buddhist influenced meat meals utilize very little spice and are usually prepared in a soup. Dairy products are especially important to Monpa culture. Yak and cow's milk is used for making various forms of yak and cow's butter and cheese (known as churpi), as well as paneer style curd and fermented milk products. Hard cheese, which is called churpi, is a common chewable snack and is a vital source of protein. A common hot drink called butter tea (suja or po cha) consists of boiling tea leaves then churning it with yak butter and salt. This drink gives off heat, energy, and maintains hydration levels during the cold winter months (Sarma, 2020).

Fermented Products and Beverages: Fermentation is a key part of Monpa culture and is important for keeping food fresh and adding flavour and nutrients to what we eat. The Monpas consume several fermented products, including Zan, Churpi, fermented Soybean (Khazi), and fermented Bamboo Shoots (Maka or Tama). Of these, fermented Bamboo Shoots are the most widely used product in the preparation of stewed foods, curries, and meat dishes. The Monpas produce traditional alcoholic beverages that are critical to their social and festival life and are offered to visitors as a sign of hospitality. There are two main types of beverage produced by the Monpas: (i) Ara – a distilled liquor made from fermented Barley, Maize, or Millet and (ii) Bangechang – a non-distilled mild Beer produced using either Millet or Barley.

These beverages are enjoyed at ritual gatherings, celebrations, such as Losar and Torgya, and are offered to visitors as a gesture of respect (Mibang & Behera, 2019).

Influence of Tibetan-Buddhist Traditions: Tibetan Buddhism has had an impact on the dietary practices of the Monpas as their food ethics are influenced by this religion. Although the Monpas generally eat meat, their animals are killed primarily for communal purposes and non-ritual consumption is generally considered an unnecessary act of killing. The Monpas also observe seasonal fasts dictated by

the Buddhist lunar calendar. When it comes to food waste, the Monpas community is very aware of not wasting food and maintains that moderation and sharing should be practiced based on Monastic ethical practices.

Cooking Methods and Culinary Style: The Monpa people cook simply, use few spices and eat mainly the freshest produce because of the harsh mountainous terrain where they live. As such, Monpa food is generally prepared by boiling, stewing and steaming rather than frying. Some of the most common Monpa dishes have been influenced by both the Tibetans and the Bhutanese, such as momos (dumplings), thukpas (noodles), barley porridge and meat stews (Tsering, 2017). Monpa families typically prepare their meals over wood-fired stoves, which provide both heat and cooking capability. In winter, communal kitchens serve as social gathering places for families to come together and share food and companionship around the hearth.

Food Sharing, Festive Cuisine and Social Meaning: Eating food is an essential aspect of Monpa society during festival. During many of the major celebrations that occur in Monpa communities, such as Losar (New Year's), Torgya (Monastic Festival) and Choskor (Agricultural Festival), families create foods specific to each celebration, including sweet rice, fried pastries, butter sculptures, and elaborate meat dishes (Lama, 2021). These events also allow for a manifestation of important community values of compassion and hospitality through the act of sharing food not only with monks, but also with guests and those less fortunate. Sharing food is a way that Monpas strengthen their kinship ties, reinforce the community bond, and gain spiritual merit. The practice of sharing food at festivals and other communal events helps to maintain a sense of community, as well as preserve traditional ways of life, despite the rapid changes in the economy and ways of living.

Recent Changes in Food Habits: Through modernisation and improved means of transportation, Monpas have been introduced to new food habits. Younger Monpas, in particular, have become exposed to differing diets due to increased access to rice, packaged snacks, cooking oils, spices and bakery products (Dutta & Lepcha, 2020). Additionally, due to the increasing number of tourists that are visiting the Tawang town and surrounding region, there has been an increase in the popularity of restaurants serving Tibetan, Indian and Chinese cuisines. Even with these changes the Monpa people's traditional food culture remains unchanged. Monpa continue to consume traditional foods, fermented foods, beverages made from barley, meat products from yak, and medicines derived from yak.

Livelihood Patterns of the Monpa Tribe: The villagers' livelihood patterns within Tawang district reflect their

complex and often resilient economy, and have been affected by geography, climate, culture, and changing markets. Geographically Tawang is located in western Arunachal Pradesh, at a very high altitude, and is predominantly occupied by the Monpa and Brokpa communities. The socio-economic patterns of villagers in Tawang are directly affected by the surrounding Himalayan ecosystem, which is characterised by long winters, short growing seasons, and steep, rugged terrain (Mibang & Behera, 2019). Villagers are engaged in multiple economic activities, including agriculture, pastoralism, forest-based industry, handicrafts, and increasingly, tourism, resulting in a diverse livelihood model that reduces the environmental risk and provides for seasonal income.

Critical dependence on forests for subsistence: Women were dependent on forest for food, fibre, fodder, medicines, raw materials for producing small items like leaf plates, mats etc. for use at home or for selling them in markets and stones for construction house (Mandal, 2013).

Agricultural Activities and Crop Production: Although agriculture provides the basis for the livelihood of most villagers, because of climate limitations, it tends to be subsistence driven. The short growing season and steep terraced fields limit crop variety and production; however, most farmers will generally produce hardy crops, such as barley, wheat, potatoes, buckwheat, and various beans, which do quite well in this cold environment (Singh, 2016). The traditional agricultural calendar corresponds with local ecological knowledge, and farming is organised through a communal sharing system (called *tsogpa*) that ensures timely planting and harvesting (Choudhury, 2018).

The average landholding size is small and fragmented, so the majority of families also practice mixed farming to maximise the use of their land. The use of livestock manure in soil management, organic inputs and indigenous methods of water management indicate strong ecological awareness and also illustrate a tradition of low-input farming. Mibang and Behera (2019) state that such mixed agricultural systems significantly contribute to household food security even with limited market access. In recent months, improved access to transportation networks has resulted in an increased (albeit marginal) opportunity for farmers to sell their surplus potatoes, vegetables and horticultural produce to local markets, but agriculture's overall commercialisation is still proceeding slowly (Sarma, 2020).

Pastoralism and Yak-Based Livelihoods: Pastoralism is a central part of rural livelihoods in Tawang, especially in areas like Jang, Lumla and Zemithang, where yak herding is an integral part of life. Brokpa herders are transhumant herders, completing seasonal migrations with their yak herds, to access alpine pastures during summer and lower

valleys during winter (Das et al., 2022). Yaks serve as an important source of livelihood through their provision of milk, butter, meat, wool, hide, and their dung can be used as fuel and animals can provide transport.

According to cultural anthropologists, yak pastoralism is an integral part of the socio-religious life of the Monpa and Brokpa peoples, and has many forms of ritualistically associated with annual herd management and seasonal migrations (Sarma, 2020). Yak wool is used in the construction of tents, ropes and clothing, and dairy products such as churpi and butter are sold locally or in the marketplace. Brokpa families typically participate in both pastoralism and small-scale agriculture, creating a dual livelihood system that allows them to share risk and build resilience. Changes in climate recently, as well as the shrinking of grazing areas and the decreased interest of younger generations in these types of jobs have put the sustainability of pastoral livelihoods under threat (Das et al. 2022).

Cottage Industries: When it comes to weaving and handicrafts, handicrafts also constitute a key source of alternative livelihoods. Women's participation in handicrafts is particularly important and significant in Monpa weaving practice, which includes traditional woollen shawls, carpets, traditional Monpa garments called 'shingka' and locally dyed fabric produced on back strap looms (Tsering 2017). Historically, these items were produced for domestic use; however, as connectivity and tourism have grown, there has been a growing and developing niche market for these products in local communities. Handicraft Centres happen to be Government run training centres that are located in Tawang and Dirang and provide training, tools and design innovations to assist rural women in being able to diversify their income sources while also maintaining cultural heritage (Mandal 2015). Producing wooden masks, household items, bamboo crafts and religious artefacts all help to increase income from cottage-based businesses. During the winter period when agricultural activity decreases, many artisan households produce seasonal handicrafts that supplement income received from farming. A handicraft income, while limited, has been identified as a critical source of income for villagers in rural areas where formal wage employment opportunities are sparse (Tsering 2017).

Tourism as a Driver for Livelihoods: In recent times, tourism has become an important driver of livelihoods for people in Tawang. With many tourist sites such as the Tawang Monastery, PTSO Lake, Shonga-tser Lake, Sela Pass and the snow covered mountains attracting a high volume of domestic tourists each year; This boom in tourism has fostered the growth of ancillary businesses such

as hospitality services, transport, guiding services, food stalls, homestays and the sale of local souvenirs (Lama, 2021). Research suggests that there has been an increase in diversification of household income due to tourism; Greater participation by women in market based economic activities; and increased local enterprise through homestay businesses and the establishment of small restaurant outlets (Dutta & Lepcha, 2020). Many villages located along major tourist corridors are benefiting from the sale of locally made products, local cultural performances and the provision of trekking support services. However, some researchers warn that tourism is heavily dependent upon seasonal fluctuations, political instability, weather fluctuations and road access, all of which create uncertainty regarding tourism-generated income (Lama, 2021). Sustainable tourism practices, waste management and community involvement are three ongoing challenges to the sustainable development of tourism.

Practice of Use of Forest Resources and Traditional Ecological Knowledge: Village communities rely heavily on forest and high-altitude grassy areas for ecosystem services. Collection of firewood, consumption of wild edible plants, use of medicinal plants, harvesting bamboo, collection of mushrooms and collection of fodder remains a major livelihood source, especially in isolated or remote villager homesteads (Choudhury, 2018). Historically, traditional knowledge of plants and the sustainable use of plant species in forests has enabled villagers to harvest from wild forest environments in a manner that did not result in the large-scale degradation of ecosystems. Additionally, sacred groves that surround both monasteries and villages, are viewed as conserving the environments in which they are located, which corresponds with the Buddhist philosophy of maintaining harmony with nature (Mibang & Behera, 2019).

Public Services, Employment and Schemes in the Tawang Region: Public service jobs are a major contributing factor to income in the Tawang region, especially in villages where educational, medical and government jobs are available (Mandal 2015). The government supports job creation with the MGNREGA, PMGSY and NRLM government job schemes. MGNREGA provides job creation mainly in the form of seasonal or intermittent wage labour, and creates economic opportunities for rural people by creating agricultural input and productive assets like footpaths, canals for irrigation, and shelters for communal storage and development. These government programs assist to overcome the seasonal income gap that extreme winter weather creates, and support the development of rural economic potential.

Changing Employment Opportunities and Challenges:

In Tawang, trends in livelihood have changed from being exclusively subsistence-based to becoming a combination of subsistence and semi-commercial livelihoods as tourism, improved road access and government employment programs are changing the options available to the Monpa people. There are still many significant challenges that must be met to maintain these mixed employment opportunities. Climate change is threatening the future of farming and the availability of water in the alpine region, migration of younger generations out of their communities is taking away available workers for agriculture and animal husbandry, and the weight of tourism is creating environmental pressures on the resources and environment of the Monpa people and the locale (Das et al 2022). Despite these challenges, the Monpa community is continuing to sustain their livelihoods with the strength of their cultural heritage and cooperative practices and ecological knowledge.

IV. LIMITATIONS OF THE STUDY

1. The methodology relies on secondary sources, and therefore does not reflect any change in the household level of agricultural production practices;
2. A complete representation of the variation between villages within Tawang will not be captured through the use of secondary data;
3. Newly enacted policies and changes related to climate that may have occurred recently will not be captured through secondary data sources that are produced several years prior to the time of preparation of this study; and
4. A lack of the ability to conduct direct observational research on the processes of food production and economic activities of household levels will limit the conclusions reached based on the findings in this study.

Despite these limitations, the triangulation of multiple scholarly sources will further validate the findings of this study.

V. CONCLUSION

Cultural, ecological and local resource management perceives a close symbiotic relationship between the food habits and the livelihoods of the Monpa Tribe in Tawang District. It reflects an ancient way of life adapted to the Himalayan region over hundreds of years. Traditional crops like maize, barley, buckwheat and millets provide the Monpas with a source of nutrition and traditional clothing made from yak, sheep and cattle, thus reinforcing a way of subsistence that is culturally embedded in their Buddhist

heritage and also ecologically sustainable through their reliance on the traditional crop rotation system. Their food preparation methods, which rely heavily on fermentation and herbs and little processing, indicate an innovative approach to utilising the local flora and a comprehensive understanding of seasonality, climatic limitations and the medicinal properties of the plants. Monpa livelihoods encompass agricultural activities, animal husbandry, weaving, forest-based occupations, trans-Himalayan trade, etc., and continue to impact the socio-economic dynamic of Monpa society and are augmented by various emerging tourism, improved connectivity and government-led development opportunities.

In addition, the article has indicated that the Monpa Tribe's traditional systems are being transformed due to Diversification, the impact of the Modernization of the Monpa tribe, the development of the Market, and the gradual increase in the effect of Modern Technology and the Adoption of Modern Education on the traditional lifestyle of the Monpa Tribe. These changes have resulted in a New and positive avenue for Income Diversification and Economic Security for some Monpas, while at the same time create a challenge for the preservation of the Indigenous Food Practices and Livelihood Derivative Skills, which are an integral part of the Cultural Identity of Monpas. The protection and preservation of the Unique Food Culture and Livelihood Strategies of the Monpa require a balanced approach, which consists of community based Preservation of Traditional Knowledge, Promotion of the Traditional Knowledge, and the Development of Contextualized Development Policies. The Experience of the Monpa represents the resilience of Indigenous Societies in Arunachal Pradesh and underscores that all Indigenous Societies must ensure their Cultural Identity remains intact while providing for their socio-economic progress in an ever-increasingly Interconnected World.

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